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Ministry of Energy, Mines and
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MINERAL RESOURCES DIVISION
Geological Survey Branch

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BRITISH COLUMBIA
CANADA

June 1992

PREFACE

This is an inventory of major projects which the B.C. Geological Survey Branch plans to carry out during the 1992 field season. This publication is intended to document this current research for government, the mineral industry and the interested public.

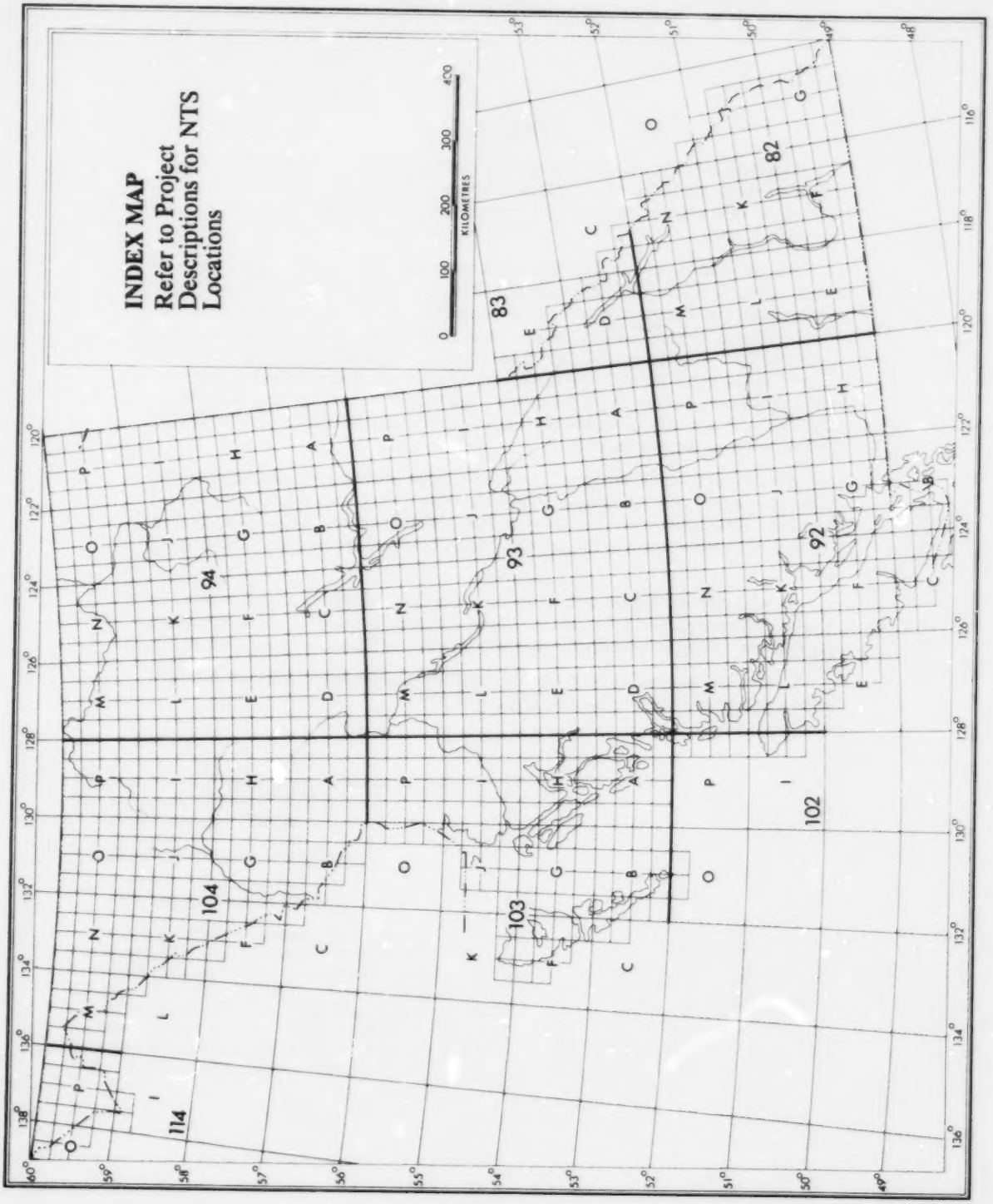
The Branch has planned an aggressive program of geoscience research in all areas of the province. The Mapping and Resource Evaluation Section will focus primarily on our important 1:50 000-scale regional mapping program; the Economic Geology Section will continue metallic mineral, coal and industrial mineral research projects; the Environmental Geology Section will continue with its successful regional geochemical surveys and surficial geology research; the District Geology Section will continue its service to industry and the public through regional offices; and, the Geoscience Information Section will continue to administer the MINFILE and Assessment Report databases.

Notably the Branch has initiated a new program of evaluating mineral potential in the province. In 1992/93 this program will evaluate Vancouver Island and selected portions of the Cariboo and Kootenay regions. The techniques of appraisal will then be applied to other areas of the province, particularly where land use studies are a priority.

These activities are intended to provide critical information and support to industry, the public and government in order to stimulate mineral exploration and provide the geoscience database necessary for informed land use management.

Comments, suggestions and queries regarding the Geological Survey Branch's geoscience program are welcomed and encouraged.

W.R. Smyth
Chief Geologist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MAPPING AND RESOURCE EVALUATION

Section: Mapping and Resource Evaluation

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base) (MDA if so noted)	NTS Map Area
1992-1993	Derek Brown Golden Bear	80 $198 260	104J/4, 104K/1

Project Statement: The Golden Bear project, named after the operating gold mine in the area, covers a remote part of northwestern B.C. (104J/4, 104K/1). Access to part of the area has recently been improved by the construction of the mine road, a helicopter is required for the remainder. The area, underlain by the Paleozoic Stikine assemblage, hosts the structurally-controlled Golden Bear Mine and farther to the northwest, the volcanogenic Tulsequah Chief deposit. The mine is projected to exhaust current reserves within four years. Recent exploration attention has been divided between the search for new reserves in the immediate mine area and more regional targets of porphyry copper systems associated with Mesozoic volcano-plutonic complexes (Kaketsa Mountain), and massive sulphide veins (Wolverine showing). The objective of this project is to provide a regional 1:50 000 scale framework for the exploration industry, improve the database for land use planning and complement previous studies by Oliver and the Regional Geochemical Survey.

1992/93 Work Plan: May-June 15 Office research and data compilation.
June 15-Sept. 1 Fieldwork.
Sept.-March Geological Fieldwork article, Open File map.
Jan/Feb Exploration Roundup.

Publications: N/A.

06713 1992-1993	Logan Schaft	30 $140 000	104G/7

Project Statement: In sheet 104G/7, the calcalkaline Schaft Creek Cu-Mo-Au porphyry deposit contains 1 000 M tonnes of 0.03% Cu, 0.02% MoS_2, 0.004 g/t Au and 0.035 g/t Ag. A definitive age for the deposit is not known and its relationship, if any, to the alkaline porphyry deposit at Galore Creek is uncertain. Regional north-trending structures control intrusions, mineralization and volcanism that spans at least 200 Ma (Triassic to Recent). Specific relationships (*i.e.* do they control sedimentation) are not known. Hot spring activity and anomalous epithermal element suites (Hg, Sb and As) are located along these structures as are most of the 10 MINFILE occurrences.

1992/93 Work Plan: Complete write-up of Galore Creek map area and produce mineral potential maps of these areas. Map west 1/2 of 104G/7 to extend Forrest Kerr-More Creek mapping northward to encompass the major calcalkaline Schaft Creek porphyry deposit. Start final reports for these three sheets.

Publications: N/A.

Section: Mapping and Resource Evaluation

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base) (MDA if so noted)	NTS Map Area
	Nelson/Bellefontaine	90	93N/7W, 10S,
1990-1994	Nation Lakes	$219 135	11E, 14E

Project Statement: Since the discovery of the large-tonnage, potentially bulk-mineable Mt. Milligan copper-gold deposit, the northern Quesnel Trough has become the site of aggressive staking and exploration. The geological database, except for the three map sheets previously covered by this project in 1990 and 1991, is insufficient to provide answers to many fundamental questions posed by explorationists: where are the intrusions? What structures may have controlled their emplacement? When did mineralization occur and what are its controls?

1992/93 Work Plan: In 1992 mapping will extend along the eastern margin of the Hogem batholith up to the Takla rainbow property, including a zone of very strong linear magnetic anomalies that is considered a possible deep crustal feature, and thus a control on plutonic emplacement and mineralization. Companies working directly in the area include Westmin, Rio Algom, Placer Dome, and Teck.

Publications: FW90 p.89-110; FW91 p.103-118; OF91-3; OF92-4.

06719	Diakow	90	93F/3, 6
1992-1995	Interior Plateau Project Fawnie Range Program	$114 000 (MDA)	

Project Statement: The Fawnie Range program is part of a major new multidisciplinary geoscience project in the Interior Plateau physiographic region of west-central B.C. The Interior Plateau project is jointly executed by the B.C. Geological Survey Branch and the Geological Survey of Canada, and funded by the Canada-B.C. Mineral Development Agreement. The Fawnie Range program encompasses two 1:50 000 scale mapsheets (93F/3, 6) with two distinct environments and ages of precious metal deposition. The Capoose deposit has precious metal inclusions in base metals disseminated in Late Cretaceous (Maastrichtian) sub-volcanic rhyolite dykes and sills. By comparison, precious metals at the nearby Wolf deposit are in quartz-carbonate veins and breccia formed during hydrothermal activity associated with felsic volcanism and small-scale subsidence in the Eocene Ootsa Lake Group.
Geologic mapping will divide volcanic-sedimentary successions, determine geologic controls and potential for epithermal veins and high-level porphyry deposits, and provide fundamental data for resource planning in the area.

1992/93 Work Plan: During 1992, geologic mapping will concentrate in mapsheet 93F/6 where generally higher topography, particularly in the Fawnie Range, will result in above average exposure and perhaps a more complete record of Mesozoic and Cenozoic lithostratigraphy. During the second and final year of fieldwork in 1993, mapping will be expanded southward into mapsheet 93F/3. The proposed Fawnie Range program encompasses important mineral exploration sites at Capoose and Wolf where regional geologic studies will be augmented by recent detailed deposit studies by Andrew (1988). Additional detailed work on mineralized-altered zones will be conducted where warranted.

Publications: N/A.

Section: Mapping and Resource Evaluation

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base) (MDA if so noted)	NTS Map Area
1992-1996	Schiarizza Interior Plateau Project	75 $154 000 (MDA)	92O/5, 6

Project Statement: The project area encompasses Mesozoic and Cenozic volcanic, sedimentary and intrusive rocks along the transition from the Coast Mountains to the Intermontane belt. It includes a number of porphyry-style mineral occurrences, including the large-tonnage Fish Lake copper-gold deposit, as well as transitional and epithermal precious metal vein deposits. However, the present geologic database is insufficient to provide answers to fundamental questions regarding the controls and potential distribution of mineral occurrences. This project will address these questions and provide an evaluation of mineral potential that will aid exploration and provide a basis for informed land use decisions.

1992/93 Work Plan: May-June 15: prepare for fieldwork.
June 15-August 31: fieldwork; geologic mapping will encompass the Fish Lake deposit and will tie in with the northern limits of the Taseko-Bridge River and Chilko Lake project areas.
September-October: prepare Fieldwork report.
November-December: prepare Open File maps (1:50 000 and/or more detailed).
January: poster session for Cordilleran Roundup.
February-March: office-based research.

Publications: None.

06719 1992-1993	Contractor Interior Plateau Project Bedrock Geology and Assessment of Industrial Mineral Potential of Tertiary Rocks	143 $45 000 (MDA)	93B/8W, 9W, 10E

Project Statement: Industrial mineral deposits are an important component of the Tertiary sequence in the Quesnel area. Ceramic clays and natural pozzolan are reported from the vicinity of Quesnel, and for a number of years diatomaceous earth has been produced from a quarry for the manufacture of insulation refractory bricks and industrial and domestic absorbents. There is also good potential to identify sources of bentonite and zeolites.

1992/93 Work Plan: During the summer of 1992, 1:50 000 scale geological mapping and sampling will be completed for NTS sheets 93B/8W, 9W and 10E. Following the field studies there will be laboratory analysis starting with XRD of all suspected zeolite and clay-bearing samples and microscopic and analytical studies of diatomaceous earth samples. The result will be one and one-half 1:50 000 map sheets with a written assessment of the industrial minerals potential of the Tertiary volcano-sedimentary sequence.

Publications: N/A.

Section: Mapping and Resource Evaluation

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base) (MDA if so noted)	NTS Map Area
1992-1994	Mihalynuk	45 $250 000	

Project Statement: The Haines Triangle is located in the extreme northwest corner of B.C., bounded on three sides by Alaska and Yukon Territory. This area has both high wilderness and non-renewable resource value. In particular, the proposed development of the world-class Windy Craggy copper deposit and increasing recreational use of this area by wilderness river rafters has forced public opinion of the land use decisions to be made. On one side are mining companies that have invested tens of millions of dollars in exploration and development costs to establish gross reserves valued at 18 billion dollars, and on the other are environmental activists who propose that the Haines Triangle be included with neighboring Glacier Bay and Kluane parks into the worlds' largest international wilderness area.
An integrated resource planning approach is required to insure that the area is managed in the best interests of the people of B.C. In order to achieve this goal, a multidisciplinary project is planned that will gather the data required for informed land use decisions, within a time frame of approximately 18 months. Our component of this project is an assessment of the mineral potential of this area. The existing geologic database required to accomplish this goal is inadequate, thus geologic mapping and geochemical surveys are required to determine the non-renewable resource endowment of this relatively unexplored and unmapped area. A map and report detailing the mineral potential of the area known as the Haines Triangle west of the Haines Highway will be produced.

1992/93 Work Plan: The anticipated duration of the project is 18 months, encompassing two field seasons. Because of the relatively poor existing geologic database, virtually the entire area will have to be mapped at 1:100 000.
As of press time the delivery of this program is uncertain.

1991-1994 (year 2 of 4)	Ferri Northern Quesnel Trough (Aiken Lake)	90 $192 000	94C/5

Project Statement: The northern Quesnel Trough, site of the recently discovered large-tonnage Mt. Milligan copper-gold porphyry, is undergoing aggressive exploration. There is concurrent major exploration for carbonate-hosted lead-zinc deposits to the east, in the Cassiar Terrane. The existing geological database is at 1:250 000 scale, inadequate to delineate areas of higher than average mineral potential. The main targets are copper-gold porphyries and carbonate hosted lead-zinc mineralization. Secondary targets are skarns and epithermal gold deposits.

1992/93 Work Plan: Map northwest along the Mesozoic volcanic arc to map sheet 94C/5 and cover parts of 94C/6, 12 & 94D/8. This area is contiguous with 1991 mapping; it will trace Mesozoic and Paleozoic sequences northwestward and define metallotects. Tectonically, the mapping contributes to a better understanding of the boundary between Quesnel and North American rocks.

Publications: OF 1992-11; Paper 1992-1; pp.127-145.

Section: Mapping and Resource Evaluation

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base) (MDA if so noted)	NTS Map Area
	Graham Nixon	95	92L/5
1992-1995 (year 1 of 4)	Quatsino Sound, Northern Vancouver Island	$60 000 MDA $135 550 A Base	

Project Statement: This new project will provide regional 1:50 000 geological maps of the Quatsino (92L/12) and Mahatta Creek (92L/5) sheets and the western halves of the Alice Lake (92L/6) and Port NcNeill (92L/11) sheets on northern Vancouver Island. This area is underlain by Mesozoic rocks predominantly of the Vancouver and Bonanza groups and hosts important porphyry copper (Island Copper), copper-gold skarn (Merry Widow), iron-skarn and gold-vein mineralization, including epithermal to transitional deposits. Metallogenic and mineral potential overlays will be prepared in order to stimulate exploration activity and assist in government land-use decision making.

1992/93 Work Plan: To cover 92L/5 (Mahatta Creek) at 1:50,000 to contribute to mineral exploration initiatives that are currently underway.

Publications: N/A.

ECONOMIC GEOLOGY

Section: Economic Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06721 1992-1993	Ash Listwanite Phase II	40 $61 000	93K

Project Statement: Listwanite Phase II will involve 1:100 000 scale geological mapping combined with stream sediment sampling over a belt of Cache Creek oceanic rocks in the Fort St. James - Stuart Lake area of central B.C. The purpose is to apply and test the ophiolite-mesothermal lode-gold deposit model developed during Listwanite Phase I and to assess the mineral potential of this belt of oceanic rock.

1992/93 Work Plan: Complete Mesothermal Gold Deposit Model Bulletin.
To publish external papers outlining results of Listwanite Phase I.
Initiating in mid August, 1.5 months of fieldwork will be conducted in the above mentioned field area. The results of this work will be presented in three formats;
1. Open file Geology map.
2. Paper in Geological Fieldwork discussing the geology and economic potential of the study area.
3. Poster presenting these results at 1993 Roundup.

Publications: Paper 1990-1, pp.365-374; Paper 1990-1, pp.359-364; OF 1990-22; Paper 1992-1, pp.253-260.

06722 1986-1992	Panteleyev Quesnel Mineral Belt	0 $31 000	93A, 93B

Project Statement: To establish the geological framework and depositional setting of mineral deposits in the southern Quesnel Trough in the Quesnel River and Horsefly Lake areas. Mineral deposits of note are alkalic stock-related porphyry copper-gold deposits, auriferous quartz veins and the QR deposit, a new type of gold occurrence in propylitized basaltic rocks. Bedrock sources of placer gold in the Miocene and younger Horsefly River drainage system are considered. A summary paper and 1:1 000 000-scale compilation map are being prepared based on fieldwork and research conducted from 1986 to 1988. The paper describes the geology and mineral potential of this Triassic/Jurassic volcanic arc.

1992/93 Work Plan: To complete preparation of a 1:100 000 scale compilation map and summary publication entitled Geology and Mineral deposits of the Quesnel River - Horsefly map area, Quesnel Trough, Central B.C. by A. Panteleyev, D.G. Bailey, M.A. Bloodgood and K.D. Hancock.

Publications: Paper 1990-3, 36 p. (Bloodgood); OF 1989-20; OF 1990-31; OF 1989-14; OF 1987-09; PM 67; PM 20; Paper 1989-1, pp.79-82; Paper 1990-1 pp.159-166, 167-172, 173-182; Paper 1989-1 pp.79-82; Paper 1988-1 pp.147-154, 139-146, 131-138; Paper 1987-1 pp.125-134, 135-142.

Section: Economic Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06722 1991-1994	Panteleyev Porphyry/Epithermal Transitional Deposits	60 $131 140	92L, 92O, 92I

Project Statement: Intrusion-related hydrothermal systems with advanced argillic alteration and acid sulphate/high sulphidation mineralization, with or without enargite, will be examined for their copper and precious metal potential. The study is provincial in scope, focussing on selected areas with indicated potential. Major copper-gold-silver deposits transitional between porphyry copper and high-sulphidation epithermal types are found around the circum-Pacific rim but few deposits of this type are recognized in B.C. Favourable areas and exploration targets need to be identified and assessed to ensure that these important copper-gold-silver deposits are not overlooked by future Mineral Industry exploration programs. The geochemical expression in leached cappings, water and silts derived from weathered (oxidized and leached) high-sulphidation mineralization will be documented. Descriptions of B.C. deposits and favourable environments will be compiled and an occurrence model developed.

1992-93 Work Plan: Database for areas with advanced argillic alteration and acid sulphate/high sulphidation mineralization in B.C. will be expanded by literature and field study. Field studies will continue in the north Vancouver Island copper belt, to study the relationships between Bonanza volcanic rocks, Island intrusions and high level hydrothermal systems. Several other priority areas around the province will be examined, including the Taseko River region Westpine/Taylor-Windfall/Esso-Westmin and Big Sheep Mountain) and Cantilever Range arsenical gossan zone. Fieldwork will be from July to mid September, 1992.

Publications: Paper 1992-1, pp.231-234; Paper 1991-4, chapter 7, pp.163-212.

Section: Economic Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06723 1989-1994	Ray Mineralized Skarns in B.C.	9 $44 932	Provincial in Scope

Project Statement: This five year project aims to establish the controls of skarn mineralization throughout the province and establish genetic models for skarn formation. This information will promote exploration of precious and base metal skarns throughout the province and facilitate evaluation of their resource potential. It has involved two field seasons (1989 and 1990) mapping Au, Cu and Fe skarn deposits in selected areas (Texada Island, Merry Widow, Iskut River, as well one season (1991) examining various mineralized Cu, W, Mo and Sn skarns throughout the province. The remaining 1.5 to 2 years of the project will be spent doing laboratory research on the 800 mineralized skarn occurrences in B.C., compiling and processing the geochemical and other data, and writing the summary publications.

1992/93 Work Plan: 1. To get the Hedley bulletin (from the previous Hedley project) ready for publication
2. To complete the ongoing compilation of data for the 800 skarns in the province, and examine their metallogeny, distribution and spatial and temporal relationships to the tectonic belts and litho-structural terrains. Studies will include microprobe analyses and fluid inclusion analyses.
3. To start writing a bulletin and preparing a map showing the location of all known skarns in relation to the geological terranes.
4. To publish external papers outlining the results of this skarn project.
5. If necessary, to complete 7-9 days fieldwork checking and reexamining any problematic skarns for our database.

Publications: Open File Map 1990-3; Geological Fieldwork 1989, Paper 1990-1, pp. 257-265; Open File Map 1991-8; Geological Fieldwork 1990, Paper 1991, pp. 245-253; Geological Fieldwork 1990, Paper 1991, pp.255-262; Geological Fieldwork 1991, Paper 1992, pp.235-252; Paper 1991-4, pp.213-252.

06724 1992-1993	Hora Talc Deposits, SE B.C.	17 $18 000	82N, 82O

Project Statement: B.C.'s pulp and paper industry is importing up to 10 000 tonnes of talc annually and there is a market for more if the product is locally available. A pharmaceutical quality talc deposit is in production in Washington State, talc there is associated with Windermere Dolomites. Two enigmatic soapstone occurrences are known in the Rocky Mountains north of the Mt. Brussilof magnesite deposit, one of them is a past producer. The geological controls of these two occurrences will be assessed to provide prospectors and industry with guidance to identify potential deposits elsewhere and to have criteria for assessment of talc potential in the Cambrian dolomite sequence deposited more inland from cathedral escarpment and found in the B.C. Rocky Mountains.

1992/93 Work Plan Field mapping and assessment of two talc/soapstone showings by a contractor. This will provide the basic data to assess geological controls for talc deposits in Rocky Mountains. The two showings are hosted by dolomites of Cambrian age. It is expected that 17 field days will be needed to gather the necessary data.

Publications: N/A.

Section: Economic Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06724 Ongoing	Hora Industrial Minerals - Operations	35 $167 562	Throughout B.C.

Project Statement: The Industrial Minerals operation project leader monitors all activities in the Industrial Minerals Sector throughout B.C. - prospecting, exploration, development, mining, transportation, marketing, usage, exports, imports, policy and legislation. The leader also provides direct supervision of a number of industrial minerals projects and related activities. As the primary source for Ministry expertise on industrial minerals, the leader advises on regional mapping and land use projects.

1992/93 Work Plan: The Industrial Minerals Specialist will supervise:
A) play lead role in assessment of Industrial Mineral Potential of Vancouver Island;
B) the implementation of talc, soapstone and minor property examination studies, *e.g.,* rhodonite and dimension stone.

Publications: 5 OF Reports, 2 Papers, 1991 Industrial Minerals Forum; Fieldtrip Guide and Proceedings.

06726 1990-1993	Simandl Magnesite Deposits	10 $90 000	82M/9, 82G/13, 82F/8, 82N/8, 82J/13

Project Statement: Magnesite deposits are an important source of calcined, dead-burned and fused magnesia, as well as of magnesium metal. Southeastern B.C. has an exceptional geological potential as source of these products. Initial work focussed on the Baymag Mine. The project will include field studies of nine sedimentary-hosted magnesite deposits to assess the economic potential, to explain their origin and to produce exploration guidelines. A secondary objective is to examine a possible link between magnesite and Pb-Zn deposits.

1992/93 Work Plan: Laboratory work and report writing will be the principal project activities with limited field checking. This will be followed by evaluation of magnesite quality, mineralogical, petrological, isotope and chemical studies and fluid inclusions. A critical element of the project is cooperation with outside researchers. The principal result will be documentation of sedimentary-hosted magnesite deposits in B.C. and a deposit model.

Publications: OF 1992-14; EXPLN 1991, pp.81-86; Fieldwork 1990, pp.269-278; Fieldwork 1991, pp.461-478; 2 Papers CIM; GAC-MAC 1992 abstr.; CIM 1991 (abstr.); Expln 1992.

Section: Economic Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06726 1992-1994	Simandl Graphite Potential of B.C.	15 $18 000	93O

Project Statement: Crystalline flake graphite is an industrial mineral used in a wide variety of applications. The average price of crystalline flake graphite is high (> $900 US/tonne), therefore, it may be exported farther than many industrial minerals currently mined in B.C. Good quality crystalline graphite mineralization is known to exist in Canada in amphibolite to granulite-grade metasedimentary rocks in Ontario and Quebec. Several graphite occurrences have been reported in sillimanite-bearing paragneisses and marbles of the Omineca and Coast Plutonic belts, however, none of these showings is described in detail. A specific, relatively easy accessible occurrence on Bentick Arm will be investigated. If results are positive, then poorly known paragneisses or marbles in B.C. may host world-class graphite deposits.

1992/93 Work Plan: Field appraisal of an easily accessible occurrence on Bentick Arm near Bella Coola will be followed up with determination of graphite grade and quality, the nature of the host rocks, metamorphic assemblage and tectonic setting.

Publications: N/A.

06727 1991-1995	Höy Sullivan-Aldrige Project (Massive Sulphide Project)	16 $40 800	82G/5

Project Statement: The Sullivan project is a multidisciplinary study of the Sullivan mine in southeastern B.C. and its local and regional setting. It is jointly coordinated by the Geological Survey of Canada and the B.C. Geological Survey Branch, and includes other workers from United States Geological Survey, various institutions and industry.
The objectives of the project are to document available geological data on the Sullivan deposit, to conduct stable isotope, geochemical and geochronological research, to undertake detailed mapping in the vicinity of the deposit in order to better understand local depositional controls, and to do regional mapping in areas of high mineral potential. These studies are being completed to assist exploration for similar world class silver-lead-zinc deposits in B.C. and Canada.

1992/93 Work Plan: A total of 2 weeks fieldwork which will include core logging of drill holes in the regional footwall alteration zone of the Sullivan deposit (the North Star - Sullivan corridor), mapping of selected mineral occurrences and coordinating a meeting with industry and other members of the Sullivan-Aldridge project. This will be followed up with 1 to 2 months of office work to carry out administrative duties as an executive of the project and to complete summary articles for publication and a poster display at Roundup.

Publications: Geological Survey of Canada, Current Research, 1991, pp.45-57; Minerals Forum, Ottawa, poster, 1992; Roundup, Vancouver, poster, 1992.

Section: Economic Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06727 1987-1993	Höy Rossland Project	9 $49 981	82F/3

Project Statement: The Rossland project involves regional mapping of Lower Jurassic Rossland Group rocks between Nelson and Rossland in southeastern B.C. and study of selected related minerals deposits. These deposits include the Rossland gold camp, the second largest historical gold producer in the province, gold Skarns (*e.g.*, Second Relief), silver-lead-zinc veins of the Ymir and Arlington camps, recently discovered shear-related gold deposits and alkali porphyry gold-copper deposits such as Katie. The objective of the project is to determine the setting and controls of mineral deposition and to delineate areas of high mineral potential.

1992/93 Work Plan: One week of fieldwork will be spent core logging and sampling particularly in the Rossland camp. A number of separate papers for both internal and external publication will be prepared (dependant on commitments to other projects).

Publications: OF 1991-16; OF 1991-2; OF 1990-8; OF 1989-1; OF 1988-1; Paper 1992-1, pp.261-271, pp.9-19; Paper 1991-1, pp.21-31, 9-20; Paper 1990-1, pp.19-27, pp.11-17; Paper 1989-1, pp.33-43; Expln 1989, pp.21-28; Expln 1990, pp.73-80.

06728 1987-1993	Alldrick Iskut-Sulphurets	0 $132 000	104B

Project Statement: The Iskut-Sulphurets Gold Belt, located north-northwest of Stewart, has been the most active mineral exploration district in Canada for the last five years. Three gold mines, Snip, Johnny Mountain and Goldwedge, have come into production since 1981 and three other properties are in advanced stages of exploration. Despite this recent success, the geology of the area is not well known. Parts of it have never been mapped and existing geology maps are 20 to 60 years out of date. The purpose of this project is to provide the critical geological database necessary for successful exploration for precious and base metal deposits in this mineral-rich part of B.C. Specific objectives are to produce geological maps of the belt; to identify mineralized areas and to publish deposit models to assist exploration programs.

1992/93 Work Plan: Complete the project by publishing 1:20 000 open file maps of the Unuk River and Snippaker Creek areas, and a compilation map at 1:100 000 scale for the entire gold belt. As well, the final draft of a Bulletin will be submitted.

Publications: OF 88-4; OF 89-10; OF 90-16; OF 90-19; FW 87 pp.199-209; FW 88 pp.233-240, 241-250; FW 89 pp.115-125; FW 89 pp.337-341; FW 89 pp.343-346; EXPLN 89 pp.197-233; SEG GAC ABS88, GAC ABS90(3); FW 90 pp.131-138, 235-243; OF 1991-21, G.S.C. (ABS) 92.

Section: Economic Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06730 1986-1995	Cunningham/Kilby Peace River Coalfield Digital Mapping Program	42 $160 852	93I/1, 7, 8, 9, 10, 16

Project Statement: Map and compile, in digital format, the geology of the Peace River Coalfield. Perform geological mapping at a scale of 1:50 000 on the inner and outer foothills structural belt of the Rocky Mountains from the Alberta border to north of Peace River (93I, 92O, 93P and 94B). Construct a spatial digital database of geology and all related information such as coal boreholes, PNG wells, mapping stations, sample sites and coal tenure information. This database will be constructed with GIS integrity and referenced to TRIM digital base maps (NAD 83, 1:20 000). Traditional paper maps as well as digital maps will be produced. In addition databases too detailed for 1:50 000 scale display will be made available in digital form. The project results will be critical for future resource evaluations necessary for land use assessments and land claims negotiations.

1992/93 Work Plan: Compile existing work for the map area in a digital form and complete the field studies in the southern portion if the coalfield. Parts or all of map sheets 93I/1, 7, 8, 9, 10 and 16 will be included in the 1992/93 study. Open file maps of these areas will be produced along with computer data files of all compiled information. This area of the Peace River coalfield contains large coal resources, significant Coalbed Methane potential and conventional petroleum resources. It is also within the Carrier-Sikani land claim area and includes part of the proposed Monkman-Kakwa Provincial Park addition.

Publications: OF 1987-7, 1987-6, 1988-21, 1988-22, 1991-4, 1992-12; Paper 1987-1, pp.373-378; 1988-1, pp.463-470; 1990-1, pp.455-459; 1991-1, pp.407-414; 1992-1, pp.441-444; 1992-1, pp.433-440.

06732 1992-1993	Holuszko COALFILE/ Coal Assessment Reports	N/A $8000	Province Wide

Project Statement: The COALFILE/Coal Assessment Reports project maintains and facilitates access to the coal assessment reports in the Ministry's possession. This function is mandated under legislation and is a proven method to increase the efficiency of coal development in B.C. The information contained in the files is of significant value in the search for the Coalbed Methane and has been extensively used in planning conventional petroleum programs. The specific objectives of this project are to make a back-up copy of this valuable resource and rationalize the maintenance of the file. This project will establish the feasibility of producing a digital copy of the files for backup and access through a pilot study. The computer index file (COALFILE) will be completely removed from the mainframe computer and an equivalent capability established in the micro computer environment.

1992/93 Work Plan: A co-op student (computing) in conjunction with W. Kilby will establish a dbase (personal computer) system for coding, storing and retrieving computerized coal assessment report data. This will result in the elimination of all requirements for mainframe support (present annual costs of about $1000). Complete a pilot study to establish the feasibility and required resources to digitally scan and maintain all the coal assessment reports in digital form. This study will establish the total memory requirements needed, scanning times and retrieval methods.

Publications: N/A.

Section: Economic Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06733 1991-1993	Grieve/Holuszko Provincial Coal Quality Survey	12 $162 500	93P/3, 4; 92F/13

Project Statement: Coal quality is a critical dimension of coal resource evaluation. All studies in this project are province-wide in scope, and have both geological and engineering perspectives. Thermal coal is currently a high priority. Individual studies are concerned with coal washability, combustion characteristics of coal, sulphur, trace elements and mineral matter in coal, and general utilization potential and classification of B.C. coals. All these aspects bear heavily on the economic viability, marketability, and environmental performance of our coal deposits. Data come from two main sources: the coal assessment report library and our own annual sampling/analysis programs. Periodic updating and improvement of the *B.C. Coal Quality and Resources* brochure, and the *B.C. Coal Quality Catalog are* also a priority.

1992/93 Work Plan: Compilation and interpretation of available sulphur concentration and liberation data for all major coalfields. Detailed (lithotype) sampling of seams at coal mines in the Peace River coalfield and on Vancouver Island. Analysis (under contract) of samples for proximate, sulphur, HGI, and float-sink parameters. Possible further analysis of some samples, under contract, for combustion characteristics, specifically TGA combustion profiles and combustion tests. Detailed petrography (in-house) of 1992 and earlier samples (reflectance, maceral and microlithotype composition, sulphur associations). Detailed investigation of interrelationships of analytical results. Compilation and interpretation of available data concerned with calcium concentrations and forms in B.C. coals. Preparation of manuscripts summarizing results of various studies, as available (*e.g.* three planned open file reports; minimum one external paper and talk).

Publications: I.C. 1989-22; I.C. 1990-5; Paper 1990-1, pp.427-430; Paper 1991-1, pp.361-370, 371-380; Paper 1992-1, pp.397-404, 405-417; Proc. Parksville Coal Forum (1992), pp.189-210, 335-354.

06734 1990-1993	Ryan Coal and Coalbed Methane Resources, NW B.C.	15 $79 300	93, 94, 104

Project Statement: The project involves the study of the coal and coalbed methane resources of northwest and central B.C. Within this area emphasis will be placed on:
1) the thermal coal potential of the Telkwa coalfield including the Bulkley Valley in the Smithers to Telkwa area; 2) the coalbed methane potential resource of NW B.C. Coalbed methane is a new resource which has not been evaluated in NW B.C. There is the potential for a major resource of coalbed methane in the Groundhog Coalfield and small coal basins might contain resources of interest to the adjacent communities.

1992/93 Work Plan: Produce a compilation map of the Telkwa coal basin at a scale of 1:20 000 and write a major report on the Telkwa coalfield covering coal quality, rank, coal washability, Coalbed Methane potential and database management.
Write Open File reports on the Bowser Basin emphasizing regional coalbed methane potential resource and regional coal quality.

Publications: FW 1990, 2 papers, Tuya River, Telkwa and coal density; FW 1991, 2 papers, Telkwa Coal Rank, CBM calculations; Expln 1991, 1 paper, Seaton coal basin.

Section: Economic Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06735 1988-1993	Matheson Thermal Coalfields Project	0 $61 440	92H

Project Statement: The purpose of the project is to collect information on thermal coal where there is a paucity of data. Representative samples are being taken from selected Tertiary, Cretaceous and Jurassic coal deposits throughout the province to provide a complete data base of coal quality and distribution. Fresh unoxidized coal samples are collected from specific deposits for analysis, in some cases by drilling. Thermal coal is an important supplementary energy resource for B.C. It is poorly known due to its replacement in the last four decades by oil and gas, however, thermal coal is reemerging as a significant source of energy both in its solid form or as a source of methane.

The objective is to assess the thermal coalfields to allow resource evaluation and to promote the thermal coal deposits of the province. this initiative is complementary to some of the recommendations made by Dick Marshall in his report on *Coal in B.C. - An Assessment of Future Prospects*.

1992/93 Work Plan: A summary report will be written for the project as well several joint GSB/GSC publications.

Publications: Paper 1990-1, pp.439-444 ; Paper 1990-1, pp.445-448; Paper 1991-1, pp.391-398; Paper 1992-1, pp.427-432.

ENVIRONMENTAL GEOLOGY

Section: Environmental Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06771 Ongoing	Levson/Giles/Bobrowsky B.C. Surficial Geology Project	30 $85 625	92G

Project Statement: The objectives of this program are to develop a methodology whereby information from existing surficial geology maps can be used, in conjunction with subsurface data, to produce applied derivative products. The existing surficial geology database for the province includes approximately 2000 maps, several thousand water well records and numerous geotechnical borehole databases. Potential themes for derivative maps include: aggregate resources, drift thickness, geological hazards, liquid and solid waste disposal sites, and groundwater resources.

1992/93 Work Plan: Techniques for constructing aggregate resource maps from terrain maps will be developed for a test case area in southwest B.C. (*e.g.*, Squamish, lower mainland). Subsurface data will be collected from field studies, water well records and geotechnical borehole logs and will be integrated with surficial geology maps to produce final derivative products such as 1:50 000 aggregate distribution maps which include volume and shape estimates. Reconnaissance geomorphic and stratigraphic field investigations will be conducted in the case-study area during the summer and fall of 1992 to test the accuracy of the methodology developed. The utility of using water-well and borehole data for three-dimensional reconstructions and methods of capturing the data in a digital format will be investigated during the winter of 92-93. Maintenance and updating the surficial geology map index is an ongoing project. Assuming external funding, through the provincial Resource Inventory Commission and the federal Fraser River Green Plan (both of which require derivative surficial geology maps), digitization of the existing database will start. Computerized data transfer onto the TRIM digital base will produce accurate maps with a high level of reliability.

Publications: OF 1992-13.

06771 1990-1993	Bobrowsky/Giles Geologic Hazards Project	21 $28 457	92B/F

Project Statement: Objective - The objectives of this program are to:
a) pursue field studies in neotectonics of southwestern B.C. as a cooperative venture with the G.S.C. (Dr. J. Clague);
b) develop a series of Information Circulars for the general public on a variety of geologic hazards including earthquakes, landslides and volcanoes;
c) organize a Workshop on Geologic Hazards and publish proceedings of the meeting; and,
d) research and develop an all inclusive action plan for geologic hazards studies which could be adopted and implemented by EMPR for all of B.C.

1992/93 Work Plan: A landslide Information Circular will be submitted to Scientific Review in June, '92. Fieldwork (shovel testing, backhoe) in neotectonics involves 21 days in the summer and fall on the west side of the island. A discussion paper on the role of GSB in provincial geologic hazards research will be produced.

Publications: Current Research 90-1E, p.245-250, 251-256; FW Paper 91-1, p.307-313, FW Paper 92-1, p.325-329, CANQUA abstracts 91, p.16, CANQUA abstracts 90, p.14; OF 1992-15.

Section: Environmental Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06772 Ongoing	Sibbick/Matysek Environmental Geochemistry	15 $31 251	82, 92

Project Statement: The objectives of the Environmental Geochemistry Program are to collect geochemical and process-related information on bedrock, glacial drift, soils, waters, stream sediments and vegetation in order to: 1) establish natural concentration ranges of metals; and 2) define the effect of geological and geochemical variations on these concentrations; and 3) define the processes of metal transport and pathways by which these metals travel through the environment; and 4) develop models of metal transport which may be applied to mineral exploration and environmental studies.

1992/93 Work Plan: Data will be compiled from the RGS and MINFILE databases on the distribution and concentration of highly anomalous values of metals in sediments and waters in the Province. The watersheds of a selected group of these sites will be investigated through comprehensive sampling and analysis of sediments, waters, soils, vegetation and bedrock. Data will be analysed in order to determine: 1) the natural concentration ranges of metals; 2) the origin, residence sites and bioavailability of metals; and, 3) models of metal transport in the natural environment. Studies will be integrated with interested parties or complimentary projects from the Ministry of Health and the Ministry of Environment, Lands and Parks.

Publications: N/A.

06772 Ongoing	Sibbick/Cook Exploration Geochemistry	45 $165 449	82, 92

Project Statement: Geochemical methods applied to mineral exploration were often developed in regions with significantly different physiographic and geologic characteristics. The objectives of the Exploration Geochemistry Program are to develop, evaluate and demonstrate geochemical exploration techniques which will enhance and stimulate mineral exploration in B.C.

1992/93 Work Plan: Fieldwork in 1992/93 will include:
1) a joint program with the Surficial Geology Unit as part of the Drift Exploration Program. Studies will focus on the Goldstream deposit, the Highland Valley area and several sites in the southern Interior;
2) the investigation of a number of geochemically anomalous sites identified from the upcoming 1992 RGS release (NTS 92N, 92O and 92P). Work will involve detailed investigation and sampling of the drainages to identify the origin of these anomalies;
3) in preparation of an expected RGS program in the 93C, F and K mapsheets, a lake sediment orientation survey will be conducted in these areas to evaluate the applicability of this medium for the Regional Geochemical Survey program.
4) in order to interpret the results of a proposed Regional Geochemical Survey of the Atlin-Tatshenshini area (NTS 104M; 114O, P), a geochemical orientation survey will be conducted at known mineral deposits within this region. Work will also include the final production of the Vancouver Island Orientation Open File, the Quatsino Regional Drift Survey Open File and the Mount Milligan Till Survey Open File.

Publications: Paper 1986-1 pp.405-410; Paper 1987-1 pp.493-502, pp.503-508; Paper 1988-1 pp.579-583, pp.593-602; Paper 1989-1 pp.503-510; Paper 1990-1 pp.323-330; Expln 1990 pp.117-134, pp.101-108; Paper 1991-1 pp.323-330; Paper 1992-1 pp.307-318, pp.341-348, pp.349-362.

Section: Environmental Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06771 1990-1995	Kerr Drift Prospecting Program	60 $93 493	82M/9, 92H/15, I/6, I/9

Project Statement: The objective of this program is to develop drift exploration models for different physiographic regions in B.C., based on glacial history. The models will aid industry in developing new mineral exploration techniques in areas of drift cover. The program, undertaken in conjunction with the Applied Geochemistry Unit, has three components geared towards mineral exploration:
1. develop drift exploration methods to determine glacial dispersion and geochemical signatures of the deposit;
2. map surficial deposits at a 1:50 000 scale, and document the Quaternary stratigraphy and sedimentology to determine local and regional ice-flow history;
3. promote exploration in drift covered areas through publications and public lectures such as the CANQUA (Canadian Quaternary Association) 1993 conference on Applied Quaternary Studies in Victoria.

1992/93 Work Plan: Investigations in July and August of each selected properties will define the character and distribution of drift units on a local and regional scale. The project will focus on a model for arid glaciated highlands, developed from 3 case studies in the Aspen Grove/Logan Lake/Kamloops area with porphyry deposits (Shear, Highland Valley Cu, Galaxy). A second model for mineral exploration in alpine-glaciated areas will be developed by the study of the Goldstream Cu-Zn VMS deposit and surficial mapping of 82M/9. Data analysis and project write-up phase will require 6 months in the fall and winter of 1993. Compilation of EMPR assessment reports by a co-op student and final write-up of the annotated drift bibliography of B.C. will require 2 months.

Publications: OF 91-06; OF 91-07; FW 90, pp.323-330; EXPLN 90, pp.135-152; INQUA 91 abstracts, p.162; CANQUA 91 abstracts, p.25; OF 92-6; FW 91, pp.341-347.

06773 1992-1993	Lett Analytical and Lapidary Services	0 $334 327	N/A

Project Statement: The analytical sciences laboratory provides Geological Survey Branch and ministry clients with prompt, high quality geochemical analyses, assays, lapidary products and photographic services. The laboratory also serves the B.C. mining industry by ensuring the competency of analysts and assayers through the Assayers certification program, providing advisory services on mineral analytical topics and the publication of Open Files. Research carried out by the laboratory seeks to improve analytical techniques, quality control methods and to develop new geoanalytical procedures.

1992/93 Work Plan: The laboratory will provide services on a user pay basis, produce Open Files from water and rock geochemical data, complete an evaluation of the assayers certification program by an independent consultant, improve the quality control procedures and improve methods used for analysis of geological materials.

Publications: N/A.

Section: Environmental Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06771 1990-1993	Bobrowsky Peace River Mapping Project	0 $23 857	94A

Project Statement: The objectives of this program are: a) to add new information, through field studies, to the provincial geoscientific database on Quaternary geology by mapping in a poorly understood part of B.C. (Peace River); b) assess the threat of mass movement hazards in the highly landslide prone region of Peace River; c) explore the potential for new aggregate sources in the area which is currently undergoing a sand and gravel shortage; and, d) redefine maximum glaciation limits of Cordilleran and Laurentide ice advances.

1992/93 Work Plan: This fiscal year is targeted as the write up phase for the Peace River project. Field work was completed in 1991. Writing is planned in the fall and winter, with final submission of a Bulletin or Open File in the spring of 1993. A paper in an external journal is planned for submission in the fall of 1992. The results of this study will assist in regional aggregate resource planning, reduce the risk of mass movement hazards and improve our scientific knowledge for Quaternary geology.

Publications: Paper 1991-1, p.345-358; Paper 1992-1, p.363-374; INQUA 91 abstracts, p.29; *Geographie physique et quaternaire*, 46(1); GAC-MAC abstracts 15, p.A12; *Current Research in the Pleistocene*, 7, p.133-135; OF 1991-11 (Catto), OF 1992-in press (Catto).

06771 Ongoing	Levson Placer Geology	30 $65 953	93A, B, G, H

Project Statement: This project will address the needs of the placer mining industry for geoscientific data in areas where gold-bearing placers are buried by surficial sediments. The study of existing placer deposits in established placer camps (*e.g.*, Cariboo, Atlin, Dease, Omineca, Similkameen, and Fort Steele) will aid in the development of depositional models and prospecting techniques required for exploration purposes.
The program consists of research on the stratigraphy and sedimentology of surface and buried placers in the Cariboo and Atlin areas (completed). Development of a provincial geology database will continue by expanding these studies to other placer camps. In addition to describing geologic settings with high placer potential, this program will investigate geophysical methods of evaluating buried placers (such as borehole geophysics, seismic reflection and refraction techniques and ground penetrating radar) in conjunction with the Geological Survey of Canada.

1992/93 Work Plan: The 1992/93 project will apply geologic data collected in 1989/90 in the Cariboo to the identification of new areas with high buried-placer potential. Stratigraphic correlations will be tested with drilling and geophysical data. The utility of these exploration techniques for evaluating buried deposits will be investigated as part of a joint program with the GSC. Areas with good stratigraphic control and geologic evidence for buried placer potential will be selected for field investigations by airphoto study and office review of existing data (1 month - May/June). Fieldwork will include geophysical testing and a limited drilling program in the Cariboo (1 month-August). Data analysis and report write-up will be conducted in the fall.

Publications: Paper 1990-1, p.519-530; Paper 1991-1, p.331-344; Paper 1992-1, p.375-390; Paper 1992- 155 pp.(in review); OF 1992-7; Paper in *Alluvial Mining* (IMM), 1991, p.245-267; The Cariboo Miner, 1991, Vol.2, No.5, pp.8-9. Paper in *Glacial Environments- Processes, Sediments and Landforms* (Pergamon Press, J. Menzies ed.) GSB RN 90-7 p.5; CANQUA 1991, p.25; INQUA 1991, p.191; GAC 1990, p.76.

Section: Environmental Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06772 1992-1993	Cook/Sibbick Lake Sediment Studies	45 $40 000 (PAMD)	93C, F, K

Project Statement: Objectives of the Lake Sediment Studies project are two-fold: 1) to evaluate the use of lake and stream sediments as reconnaissance sampling media for proposed surveys of NTS mapsheets 93C, K and F; and 2) to provide a better understanding of the process of metal dispersion in the lake sediment environment.

1992/93 Work Plan: a) An evaluation of existing geochemical and limnological data from lakes in mapsheets 93C, F and K and adjacent areas to determine the effect of various limnological characteristics on geochemical dispersion.
b) An analysis of regional lake sediment data from NTS mapsheets 93E and 93L.
c) Detailed studies of lake and stream sediments. The program will centre on areas containing known mineral deposits (*i.e.* Wolf, Clisbako) within various geological environments and hosting lakes with differing limnological characteristics. An improved understanding of the relation between metal content and lake characteristics such as trophic activity, pH, Eh, relief and margin type is of particular importance.

Publications: RGS OF 16 to 33; FW 1986-1; FW 1987-1; FW 1988-1; FW 1989-1; FW 1990-1; FW 1991-1; FW 1992-1.

06772 1992-1995	Matysek/Jackaman Regional Geochemical Surveys	$50 000 (PAMD)	92N, O, P; 93G, H, J

Project Statement: Evaluation of the mineral potential of British Columbia through the ongoing development and maintenance of a high quality geochemical database consisting of stream sediment and water analytical data plus field site observations. Data is collected, compiled and published on an annual basis and includes results from new reconnaissance scale surveys as well as from the re-analysis of archived sediment samples for elements not included in the original publications.

1992/93 Work Plan: 1) Production of RGS Open File data packages for RGS conducted in 92N, 92O and 92P.
2) Analysis of RGS Archive samples from 93G, 93H and 93J.

Publications: RGS OF 16 to 33; FW 1986-1; FW 1987-1; FW 1988-1; FW 1989-1; FW 1990-1; FW 1991-1; FW 1992-1.

Section: Environmental Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
	Bobrowsky/Matysek	30	92C
1992-1994	1:100 000 Surficial Mapping	$50 000 (PAMD)	

Project Statement: The objective of this program is to provide surficial data in map format which is of basic importance for drift exploration strategies. The main outcome of this study is to promote exploration activity in an area of high mineral potential (93C) which is known to be drift covered, poorly understood from a Quaternary geologic perspective and for which no surficial map coverage is currently available. Regional surficial geology mapping at a scale of 1:100 000 will provide the widest coverage thereby increasing the total area of exploration interest beyond the confines of a 1:50 000 scale region. Initial airphoto interpretation will be followed by ground truthing and drift sampling at the 1:100 000 scale of reliability. The intent of this project is to map (on contract) two 1:100 000 scale sheets in 93C where complimentary bedrock mapping, aeromagnetic study and others studies are being undertaken as part of the PAMD for the Interior region of B.C.

1992/93 Work Plan: Background data compilation involving literature review and air photo interpretation will require 2 months preparation in the spring of 1992, and will involve a preliminary field visit to determine ease of access and which areas are best suited for detailed work. Fieldwork in the southern Interior will take place during July and August. A 4 field week investigation will involve the evaluation and assessment of interpreted terrain polygons. Given the large area of mapping, air support will be important. Field methods include pebble fabric analysis in till, lithological pebble counts, boulder tracing, and recording glacial striations and geomorphic ice-flow indicators. Bulk sediment samples of various surficial sediment types will be collected and analyzed for grain size analysis and a suite of elements. This year's research involves mapping of the northeast corner (92C/9, 10, 15, and 16).

Publications: N/A.

MINERAL POTENTIAL

Section: Mineral Potential

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
1992-1995	Kilby CRII- MEMPR	30 $450 000	

Project Statement: This project will produce a new generation of interpretive mineral potential maps for B.C. at a scale of 1:250 000. Mineral resources to be assessed will include the metallics, industrial minerals, placers, coal, oil and gas. Known mineral resources will be inventoried and an estimate of unknown resources will be made. The existing geological database will be used in the main, database enhancements will be made in areas of little or no information. Computer based Geographic Information Systems will be employed to enhance the analysis process and facilitate the exchange of raw and interpreted data with other users. The identification of known and potential mineral resource values from all areas of B.C. will enable planners to make informed decisions on land use issues.

1992/93 Work Plan: In the first year of this multiyear project geological database enhancement and mineral potential assessment will be undertaken. Assessment of the known and unknown mineral resources of Vancouver Island and selected portions of the Cariboo and Kootenay regions will be completed.

Vancouver Island, Kootenays and Cariboo mineral potential assessments will be used in the short term by the Commission on Resources and Environment to plan a long term strategy for resource development in these areas.

Publications: Mineral potential maps and reports; Mineral deposit handbook; Digital geological map.

DISTRICT GEOLOGY

Section: District Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06743 April 1992-March 1993	Schroeter/Lane	45 $184 169	Province

Project Statement: The Vancouver regional office acts as the principal technical liaison between the mining and mineral exploration industry, based in Vancouver, and the provincial government in Victoria. The office maintains a technical library containing geoscience and land use material. It provides province-wide monitoring and reporting on geoscience activity and trends.

1992/93 Work Plan: The office will continue to provide day-to-day client service to industry, government and the public. Specific projects for the current fiscal year include: to represent the ministry on several committees, including B.C. acid mine drainage task force, GSC advisory committee, MDRU, MEG, etc. Upgrade our ministry reference library for better 'client service'.

1) Mine geological information capture in B.C.: capture of geological information from mines destined for imminent closure.

2) Co-authorship with industry and publication of a descriptive paper entitled *The Geology and Mineralization of the Tulsequah Chief Volcanogenic Massive Sulphide Deposit, Northwestern British Columbia*.

3) To organize, with industry representatives and CIM staff, a 'sequel' to CIM Special Volume 15 (1976) - *Porphyry Deposits of the Canadian Cordillera*.

4) Tertiary metallogeny of the interior plateau region of central B.C. This project will complement the 'interior plateau project', under MDA II.

1992/93 Work Plan: Fieldwork will take place in the late summer and/or fall of 1992. Approximately 2 weeks will be spent in the Mt. Dent-Clisbako River area by Schroeter and Lane. Fieldwork will entail geological mapping (@ 1:5 000), sampling of trenches and diamond drill core, as well as reconnaissance surveys regionally. Office studies will be conducted over the winter months with a write-up planned for spring 1993. Fieldwork will continue during the summer-fall months of 1993 with follow-up office-related studies over the winter months.

Publications: *Exploration, Part B* (articles); Poster at Cordilleran Roundup '93; Talks.

Section: District Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06745 1992-1993	Faulkner Central District	$103 073	

Project Statement: Mineral Deposit and Metallogenic studies are one of several important responsibilities of a District Geologist in order to gather timely and accurate information required to: assist in and contribute to the development of mineral deposit models; resolve land use and native land claims issues; track mineral exploration trends. Property studies will be concentrated on significant, active, new exploration properties.

1992/93 Work Plan: Studies of 3-5 day duration will be carried out on several significant, active properties, including: Kemess and area Cu-Au porphyry deposits;
Par;
Clisbako and area epithermal Au deposits (to be coordinated with T. Schroeter);
Par and Stronsay (Cirque) Sedex Pb-Zn-Ag deposit;
Description of the deposits visited will be submitted for publication in Exploration '92 Part B, as appropriate.

06746 1992-1993	Wilton Kootenay District	$105 873	82E, F, G, J, K

Project Statement: To monitor mineral and coal exploration activity, results and trends in the Kootenay District as part of an ongoing process of evaluating the metallogeny and mineral potential of Southeastern B.C. The accumulated information will be analysed and reported to explorationists, other government agencies and the general public as a means of encouraging and aiding in the search for new mineral reserves and in influencing wise decision-making on Land Use and Resource Management issues.

1992/93 Work Plan: As many as possible of the more significant mineral and coal exploration projects, prospecting programs, and active mines and quarries will be visited and examined. It is planned to assign specific blocks of field time to review current exploration plays including the search for fault-related gold mineralization in the Greenwood camp, porphyry copper-gold and volcanogenic massive sulphides in the Rossland Group, sedex and replacement-style base metal mineralization in the Purcell Anticlinorium and epithermal mineralization in the hanging wall of the Slocan Lake Fault.

Publications: None to date.

Section: District Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06741 April 1992-March 1993	Pinsent Metallogeny and Mineral Resource Appraisal Southwestern B.C.	30 $97 873	SW B.C.

Project Statement: The project is an on-going investigation of the mineral resource potential of the Southwestern District of B.C. The study area includes the Queen Charlotte Islands, Vancouver Island and the Mainland mountains southeast of Bella Coola. It includes the monitoring of exploration and other geoscience projects, the documentation of mineral deposits, the study of their genesis and distribution, and the evaluation of mineral resource potential. The project will generate data for regional metallogenic syntheses that will improve our understanding of the controls governing mineral deposit distribution and provide the insight necessary for reasoned land use management.

1992/93 Work Plan: The following projects that are specifically designed to enhance the geological database and provide the metallogenic insights necessary to promote cost-effective exploration and rational land use appraisal will be carried out:

1) a review of the exploration industry's response to the release of geoscience data over the past twenty years. The initiative will provide a computer-centred, NTS-based, catalogue of geoscience data for the Southwestern District. This will be used to analyze past activity and examine the current state of exploration within the district. These data will provide some insight into the effectiveness of data transfer to the private sector;

2) a study of some precious-metal rich, polymetallic, mineral deposits in the Coast Mountains southwest of Whistler, B.C. (92J/2). The initiative will generate a co-authored review of the geology and genesis of the Northair Mine (92J/3E) and provide a discussion on the controls of mineralization in the Brandywine district.

3) a preliminary review of Jurassic-age 'porphyry copper' mineralization on Vancouver Island. The project will explore the geological setting of the mineralization and examine its location in relation to near-contemporary volcanism, tectonism and plutonism.

4) a preliminary analysis of the controls governing gold mineralization at the Northern end of Texada Island. The project will explore the geological setting of the mineralization and examine its relationship to stratigraphy, structure and plutonism. The project will address the opportunity for replacement deposits in receptive units both within the volcanic basement and the limestone cover.

Publications: N/A.

Section: District Geology

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06744 1992-1993	Wodjak Metallogeny and Mineral Potential of Northwest B.C.	60 $161 348	

Project Statement: Mineral deposit studies in Northwest B.C. will focus on areas of exploration activity and land use concerns. Emphasis is on upgrading the Ministry's mineral resource database to assist studies of mineral potential, respond to land use requests and contribute to resolution of Native land claims. All major exploration projects which may enter the Mine Development Assessment Process will be examined. All producing mines will be visited and cooperative effort made to archive geological data from mines nearing closure. Objectives are to serve clients and stimulate exploration activity.

1992/93 Work Plan: Major projects to be examined include Kerr, Tulsequah, Golden Bear, Windy Craggy, Eskay Creek, Polaris-Taku and Spectrum. Property visits will also focus on the Smithers area where there is renewed interest in Babine porphyry copper deposits and there are pressing land use issues, *i.e.* Babine Mountain Recreation area. Other exploration activity, such as VMS deposits in the Smithers Area and the North Coast, will be monitored. Results will be published in Exploration, Part A.

06747 1992-1993	Meyers Metallognic Studies, South-Central B.C.	90 $151 578	920

Project Statement: This project is an on-going study of ore deposits and regional metallogeny of South Central B.C. in the context of exploration and mineral development activities. The 1992/93 season will focus on the southern Chilcotin - Taseko Lakes (92O) region, which has been recently added to responsibilities of the South-Central District. This region is forecast to be one of the most active exploration areas in the province for 1992.

Work will include a review and compilation of mineral occurrence data; visits to active and inactive exploration properties and deposits with the immediate objective of up-dating and expanding the exploration and mineral deposit database. The data will be integrated into a District-wide regional metallogenic review and compilation study.

The overall objectives of the project are to amalgamate data and results of this metallogenic study with a District-wide Mineral Potential study for the South-Central District, to be carried out in conjunction with the GSB Mineral Potential initiative.

1992/93 Work Plan: (April-May) A working compilation map of the geology and mineral occurrences and exploration projects for the Chilcotin - Taseko Lakes area will be produced prior to field activities.

(June-September) Approximately one month of field work is planned for the Chilcotin area to carry out property visits and the collection of exploration data.

GEOSCIENCE INFORMATION

Section: Geoscience Information Unit

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
06762 1992-1993	Kalnins/Wilcox Assessment Reports	0 $235 000	B.C.

Project Statement: The Geoscience Information section reviews and indexes mineral assessment reports (A.R.) submitted by explorationists in compliance with the *Mineral Tenure Act*. The resulting database is used by the industry, government and public in new exploration planning, mineral and land use management, and geoscience research.
The objective is to provide timely: administration of the *Mineral Tenure Act*; A.R. processing; compilation of the assessment report database using ARIS system on B.C.S.C. VAX; widespread distribution of non-confidential assessment reports and related data products.

1992/93 Work Plan: Process new A.R. within 60 days of receipt; microfilm off-confidential reports monthly; distribute fiche copies of the reports to 25 government offices throughout B.C. and make available to the industry and public for viewing and sale; publish Assessment Report Index and maps annually; maintain a ledger of 880 active and 1010 inactive portable assessment credit accounts; maintain a library of 22 000 original A.R.; compile summary statistics quarterly, semi-annually and annually; convert the A.R. Index maps from manual plotting to computer plotting; prepare a new systems plan with proposals to convert ARIS from VAX to a PC/LAN environment.

Publications: A.R. Index Update 1991; Exploration 1990, pp.175-178.

06761 Ongoing	Jones MINFILE	0 $306 785	B.C.

Project Statement: MINFILE is the Branch's computerized mineral inventory database of over 10 900 mineral, coal and industrial mineral occurrences in B.C. MINFILE/pc is a personal computer data-entry, search-and-report program for the MINFILE database. MINFILE is used extensively by industry and government for exploration planning, resource information, land use planning, and research. Coding of the database is 77% complete, of which 60% is released. PROPERTY FILE is the hardcopy reference material for MINFILE.

1992/93 Work Plan: Of the approximate 3100 remaining occurrences (includes 20% growth) to be coded, about 1100 will be coded and over 2200 will be edited/updated by the MINFILE team. As a priority, inhouse staff will edit and release 1200 occurrences within the first 5 months of the fiscal and code 600 occurrences during the rest of the year. Contractors will code 500 occurrences. This combined effort will complete coding for over 85% of B.C.'s mineral occurrences. The goal is to release a total of 26 map sheets (1860 occurrences). This will result in 75% of the total MINFILE being released.
The MINFILE/pc software will be enhanced, as identified in change requirements evolving from MINFILE team and client requests. A new computer platform will be defined for the MINFILE system to make it functional in a network environment. Computer system plans, based on Branch business objectives, are detailed in a separate report.

Publications: IC 1991-3, 1992-2; OF 1990-32, 1992-9; 10 MINFILE mapsheets; Paper 1989 pp.613-617.

SCIENTIFIC REVIEW OFFICE

Section: Scientific Review

Project No. Project Timing	Project Leader Project Title	1. Field Days 2. Budget (A-base)	NTS Map Area
Ongoing	Grant Scientific Review	1. N/A 2. $510 343	B.C.

Project Statement: The Scientific Review Office is responsible for timely and cost efficient publication of all geoscience data generated by the Geological Survey Branch. It expedites the production of approximately 100 publications during the year; promotes easier and more convenient access to publications and data from the GSB; coordinates the BC Geoscience Research Grant Program and ensures research results are made available to the public and the mining industry.

1992/93 Work Plan: Publications:
Exploration in BC; Papers - 8; Bulletins - 11; Information Circulars - 28; Geological Fieldwork 1992; Open File Maps - 18; Open File Reports - 16; Mineral Potential Maps - 10; MINFILE - 10 map sheets; Regional Geochemistry Survey - 3 map sheets; Release Notifications and Promotions - 4.

Publications: NTS & Author Index to GSB publications; Catalog of Publications update; GSB Project Inventory; GSB Branch Plan; GSB Style Guide; microfiche of all Minister of Mines Annual Reports.